Camera Underwater Housing LX3 (Panasonic)
User Manual

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1. Introduction

Made of 6061 aluminum, 10Bar Housing is a sturdy choice for the Panasonic LX3 camera. For those who favour small cameras, it is the ideal housing to suit their needs. It is equipped with full-function control buttons, bulkhead connector for external flash and interchangeable ports for conversion lens. The acrylic back cover allows taking pictures and checking on the camera much easier. For closure, the double o-rings and key-hole lock design provide ease of use and added security. Now you can use small cameras with the feel and function of professional housings.

2. Specifications

Test Pressure	Housings individually tested to 10 Bar (90 m / 300 ft.) Recommended working pressure 60 m
Closure Design	Double O-rings, Key-hole Lock
Body Material	6061 Aluminum, Acrylic
Overall Size	134 x 152 x 112 mm (LxWxH)
Total Weight	Approximately 0.9 kg (Housing only)
Buoyancy (with camera)	Slightly negative in salt water
Accessories	Spare main O-rings (included) Silicone O-ring grease (included) Carrying bag (included) Red filter (optional) Extension arm for strobe or video light (optional) Macro and Wide Angle lens (optional) Dome port and extension adaptor (optional) Housing for FL50 Flash (optional)

3. Function Controls

3.1 Buttons & Parts

(1) FLASH ON

(2) FLASH OFF

(3) FOCUS

(4) CURSOR

(5) ASPECT RATIO

(6) MODE DIAL

(7) SHUTTER / ZOOM

(8) ON/OFF

(9) JOYSTICK

(10) DISPLAY / DELE

(11) REC / PLAYBACK

(12) AF/AE LOCK / Menu/Set

(13) BULKHEAD

(14) LOCKING LEVER

(15) HOUSING BODY

(16) HOUSING LID

(17) PORT

3.2 Control Details

(1) FLASH ON - align the white dot towards the lid, press down and turn towards the ¡lighting¡ logo, the flash should pop up.

(2) FLASH OFF - turn the ¡Flash On¡ white dot towards the lid, turn the button to wards the ¡no lighting¡ logo. Make sure that the Flash is turn off before opening the lid.

(3) FOCUS - press to activate / confirm.

(4) CURSOR - rotate until the white dot is over the required direction and press, when not in use rotate the white dot towards the screen to facilitate the ¡AF/AE LOCK / Menu/Set¡ function.

(5) ASPECT RATIO -rotate to select the required ratio.

(6) MODE DIAL - press down and turn to select the required mode.

(7) SHUTTER / ZOOM - press to activate the shutter, turn to activate the zoom function.

(8) ON / OFF - align the white dot towards the lid, press and turn to on or off.

(9) JOYSTICK - move the control to the opposite direction of the arrow shown on the screen.

(10) DISPLAY / DELE - rotate until the white dot align and press.

(11) REC / PLAYBACK - press and turn to select.

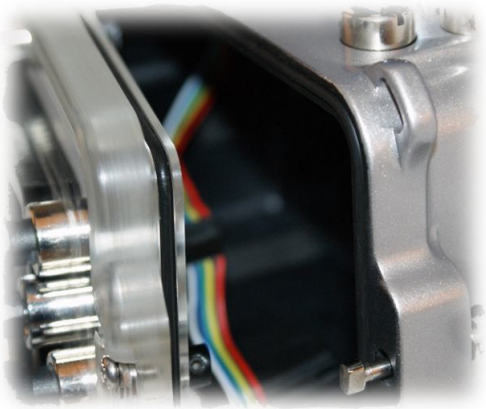
(12) AF /AE LOCK / MENU / SET - rotate until the white dot align and press, when not in use rotate the white dot until pointing downward to facilitate the ¡cursor¡ function .

For the full list of camera functions and settings accessed by each control, please consult the Panasonic LX3 camera instruction manual.

4. Set up Instructions

4.1 Special note on responsibility for watertight integrity

Each housing is individually inspected and hydrostatically tested in the factory. The design of the main piston O-ring seal is among the most reliable in the industry and the watertight integrity is excellent. This special O-ring design provides a perfect seal even if there is any movement between the body and lid due to change of ambient pressure. However please note that responsibility for ensuring the integrity of the watertight seal lies entirely with the user. 10BAR accepts no liability for damage to, or loss of any equipment used with, or placed inside the housing. *Users are highly recommended to carry out in-water test of the housings without installing of the camera for their first dive, after change of new ports or alternation of any new configuration. The test can be carried out by lowering the housing with ballast to the working depth or dive down to the safe diving range.*



The O-ring seal is the main barrier between the water outside and the air space within the camera. It is an effective barrier only if the seal is properly maintained. The O-ring seal should be inspected before every dive. The following information is provided for guidance in using and maintaining the O-ring seal.

4.2 Maintaining the O-ring Seal

If the main body to lid O-rings are not installed, install the O-rings before diving. Their care and maintenance are critical to the watertight integrity of the housing. If the O-rings are contaminated, or not already installed; inspect, grease and install the O-rings according to the following guidelines.

4.3 Inspection, cleaning and re-instillation of the O-rings

Tools

A soft cotton bud or sponge applicator, make sure these are free of all contamination such as loose fibers and sand, the tube of silicone grease supplied with the housing. Note other types of silicone grease specifically for use with underwater camera equipment can usually also be used. It is advised to carry out the following procedure on a firm clean level surface, (e.g. at a table), to prevent skidding especially when diving from a boat.

When to maintain the O-ring seal

Remove the O-ring periodically for inspection. It is not necessary to remove, clean and re-install the O-ring after every dive provided the O-rings are not become contaminated. As a rule of thumbs，set up the camera and housing before a day¡s diving. If the housing is required to be opened between dives for changing memory card or re-charging batteries, make sure the outside of the housing is thoroughly toweled dry before opening up. After removing the lid and servicing the camera, replace the lid straight away, rather than leaving it lying around. Before replacing the lid, check the o-rings and make sure that no contamination such as dust, hair, salt, sand etc. has fallen onto the O-ring or O-ring recess, as a precaution we recommend to inspect the O-ring every time the lid is opened and to carry out the maintenance only if necessary.

Procedure

The O-ring can be extracted using an O-ring extractor tool (make sure the tool as no sharp edges). Alternatively use the flats of the thumbs to gently stretch the O-ring on two faces thus making a small loop protruding a few mm. The loop can then be grasped between finger and thumb, to pull the O-ring over the lip. Clean the O-ring recess (the square groove where the O-ring sits) with a cotton bud.
Inspect the O-ring all the way round its surface for damage such as cuts， tears or contamination. This should be done visually and also by feeling the surface texture between finger and thumb.

IF THE O-RING IS DAMAGED OR SUSPECTED OF BEING DAMAGED, DISCARD IT IMMEDIATELY.

A spare O-ring is supplied with your housing, or a replacement O-ring can be ordered from 10BAR. If the O-ring is contaminated or suspected of being contaminated, clean it with an optical cleansing cloth that is free of loose fabric or contamination. After cleaning inspect the O-ring again.

Once the O-ring has been inspected and verified fit for use, apply a small amount of silicone grease to the O-ring. The silicone grease must be evenly distributed round the O-ring. Install the O-ring into the groove; run a finger round the O-ring, to make sure it is snugly seated in the groove.

4.4 Key-hole Lock

The Key-hole Lock is simple and easy to use and adding security.

To open the housing, make sure that the flash on the camera has been turned off before opening the lid.

Turn the levers of the lock perpendicular to the wall of the housing until the lock is released on both sides.

Pull out the lid by holding on the grip near the lock.

To close the housing, place the lid over the housing and align the key-hole and press down the lever.

Turn the lever towards the wall of the housing and check the key is at lock position

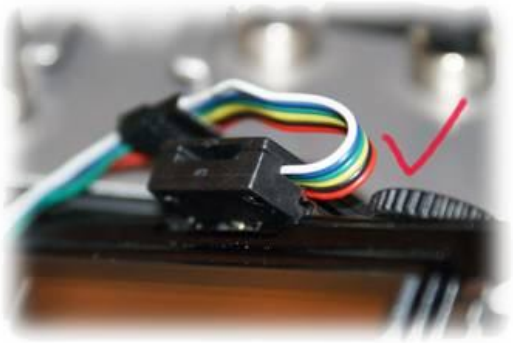
4.5 Mounting the camera in the housing:

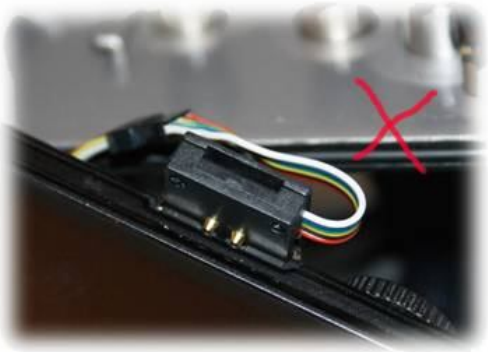
Remove the lens cap and wrist strap. Check the white dots on the control ¡Flash on¡, ¡On/OFF)¡ and ¡Aspect Ratio¡ are facing the Housing Cover Lid.

Slide the camera into the body along the rubber packing. Make sure the camera body reach the limit and test the function of the On/Off button on the body of the housing.

Align the bulkhead cable as shown below and check the cable is not jammed under any button or over the o-ring

Slide the hot shoe plug into the hot shoe





Replace the lid and make sure the lever is perpendicular to the side wall of the housing. Lock the lid by press down the lever and turn until the lever is parallel to the side wall of the housing.

After replacing and locking the lid, make a final visual inspection of the main O-ring for contamination.

Note: If the O-ring is in good contact, a thin black line, about 0.5 to 1mm in width should be visible, where the O-ring is in contact with the lid. Follow this line all the way round the edge of the seal, as a final check that the seal is good.

4.6 Mounting the Converter Lens and Dome Port (Optional)

The 10Bar LX3 housing interchangeable port system is designed to accommodate dry converter lens for use underwater. The installation procedure is as follows:

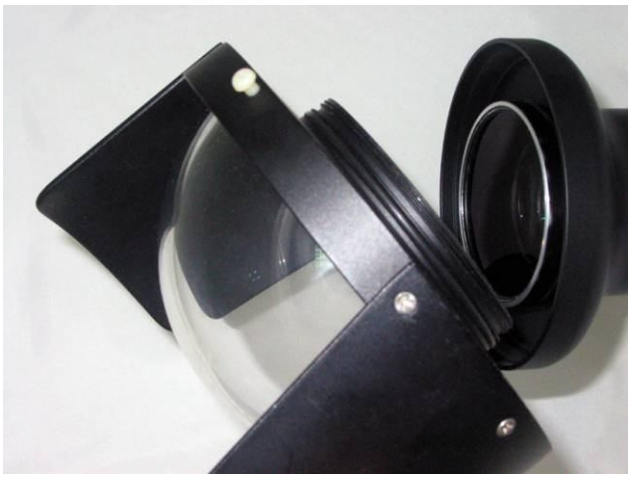
a. Remove the cover ring on the camera lens and mounting the lens adaptor

b. Install the camera into housing

c. Mount the Port Adaptor for housing

d. fix the Converter Lens

e. Install the Dome Port



There are o-rings on all the components of the port parts which should be installed according to the procedures at 4.3.

4.7 Using External Strobes:

There is an option for Bulkhead SNM5 (Subtronic) or Bulkhead NKF5 (Nikonos).

Check the o-rings and connect the strobe sync cord to housing¡s bulkhead. Tighten the lock ring to secure the cord in place. Make sue that the blank plug is secured to the bulkhead if no sync cord is connected.

5. Use & Care of Housing

5.1 Pre Dive Function Check.

Just before entering the water, make a habit of reviewing the proper steps to close the housing and connect the bulkhead. Make a visual check of the O-ring seal. It is also useful to switch on the camera, and check that controls e.g. on/off, zoom, shutter functions operate normally.

- Check housing is closed
- Check O-ring is in the groove between housing and Acrylic
- Check battery and memory card status on the LCD display
- Check control knob and zoom function
- Check the Bulkhead is properly connected or blanked.

Always avoid submerging the housing in hot water for a prolonged time or a cleansing tank where the water may be heated up by the sun.

5.2 General Operation.

The control levers and push buttons consist of internal double O-ring seals on a stainless steel shaft. This arrangement is very reliable, however as a precaution, when operating the controls, avoid excessively rapid movements, as this may distort the O-ring. Also please allow for the fact that the camera takes a few seconds to power on. If the camera does not appear to respond to a control action, make sure that no other controls are pressing on the camera, i.e. locking out further actions.
Wear the wrist strap; it is easy to inadvertently let go of the housing, especially if you are distracted.

5.3 Cleaning & Storage.

The body & lid of the housing are made of 6061 Aluminum and Acrylic respectively. 6061 Aluminum is selected for its outstanding strength stiffness, hardness and toughness, While Acrylic for its crystal clear transparency and high gloss surface. Both of them have good resistance to weathering, although long-term exposure to sunlight should be avoided. Normal operating temperature range is 3¡C to 36¡C (Storage temperature: -10¡C to 50¡C)

It is good practice to rinse off your housing with fresh water after every dive. Avoid to exposure to fine sand. After a series of 10 or more dives, e.g. after a dive holiday, it is recommended to immerse the housing for 2-3 hours in warm water to dissolve any salt deposits that may have built up. No chemical cleaners should be used.
Important!!! **For long term storage please remove the main closure o-rings from body.**

5.4 Transportation.

Please protect the housing during transportation. It is recommended to remove the handle, and shutter extension, and wrap the camera in foam or bubble wrap.

5.5 Accidents

The impact resistance of the housing is excellent. However after an accident the alignment of the housing may have been altered. Therefore in the event of your housing suffering an impact force, e.g. being dropped, it is essential that you do not use the housing for diving. Please return the housing immediately for service and put a note inside to indicate the nature of the accident, so that the severity can be assessed.

6. Service

To ensure the continued performance of your housing, it should be serviced every year, or after every 200 dives whichever is earlier. Please note the terms for servicing the housing posted at our website. A full service will include:

- Inspect all components for wears or damage (report if repair necessary),
- Clean all sealing surfaces,
- Replace all O-ring seals,
- Hydrostatic pressure test to 10 Bar.

Note: Replacement of damaged components may require additional cost.

7. Warranty

The warranty is valid within two years from the date of first purchase. The warranty applies only to the housing itself. 10BAR does not accept any liability either implicit or otherwise for any equipment housed inside, or used together with the housing. In the event of the housing flooding within the period of warranty, 10BAR will repair or replace the housing. Please note that disassembly of the housing will invalidate warranty. Please fill in the information below, and return a copy to 10Bar Underwater Housing at the address below, to validate the warranty.

(Copy to be retained by user)

Housing Type :	**Date of Purchase：**
Serial Number : (Labeled inside housing)	**Dealer :**
Owner¡s Name :	**e-mail :**
Owner¡s Address：	**Tel :** **Fax :**

Office & Showroom:

Unit C, 2/F., Wing Hin Factory Building, 31-33 Ng Fong St., San Po Kong, Hong Kong.

Tel: (852) 2573 3228 Fax: (852) 2811 9180
Email: service@10bar.com Web site: http//www. 10bar.com

Please keep this document for future reference

(Note: due to continuous improvement the latest model housing may differ slightly form those described in this document)
(Copy to be returned to 10 Bar Underwater Housings)